Theme Area:	Environmental Resources
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Project Title:	Relationships between Reclamation River Operations and Chinook Salmon Spawning Success
Principal Investigator:	Mark D. Bowen, e-mail: mbowen@do.usbr.gov
Co-Principal Investigators:	Sandy M. Borthwick and Mark S. Nelson

Abstract: In the Yakima River and upper Sacramento River watersheds, we will identify one unregulated tributary and one regulated mainstem river study site. At each site, egg survival and fry survival to swim-up stage will be measured through incubation tubes and redd caps. In association with each redd, we will monitor Reclamation River operations including discharge. Specifically, we will monitor the influence of operations on Fall chinook redd success, hyporheic flow magnitude and direction, temperature, water chemistry including toxicants, and invertebrate diversity and biomass. At each site we will monitor redds that are established in the first week and last week of the spawning season. With this information, we can compare the influence of discharge and temperature on egg and fry survival. In addition, we will monitor hyporheic conditions to determine the mechanism explaining how operations influence egg and fry survival rates. By partnering with the Yakima Basin Joint Irrigation Board, we may compare the relationship between Reclamation's operations and redd success in two watersheds and provide information regarding the influence of incubation flows on egg and fry survival..